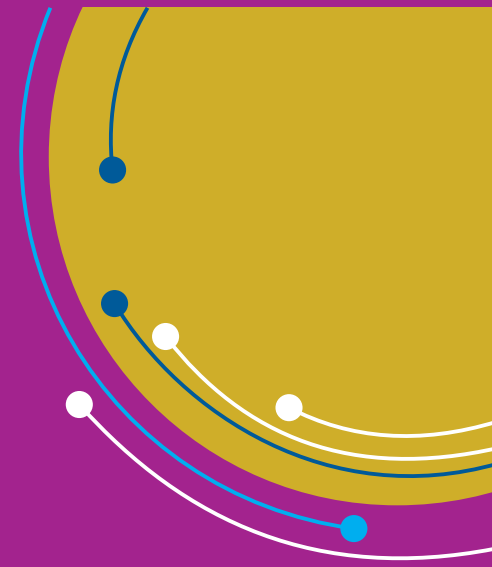


Use of Additives for Improving the Quality of Mott Grass Silage



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Mott grass is one of the high yielding fodder varieties available in Pakistan. It is high quality forage that maintains its quality over long re-growth intervals. This fodder has the potential to provide fodder in the first slump period (May-July) when other traditional fodders are inadequate. If mott grass is preserved as silage during this period and fed during second slump period (November-January), quality fodder supply can be ensured. Silage is a method of forage preservation

through stabilizing fermentation process by decreasing the pH within minimum fermentation period. In silage, lack of oxygen and the accumulation of lactic acid inhibit its microbial metabolism and preserves nutrients. Successful silage fermentation depends on achieving both anaerobic conditions and a low pH. The low pH is usually accomplished through the fermentation of sugars in the crop to lactic acid by lactic acid bacteria, which decreases plant enzyme activity and prevents the proliferation of detrimental anaerobic microorganisms. It is the view point of some people that mott grass is difficult to cut, having low feeding value and is only filler. Its feeding value can be enhanced if cut at recommended stage and preserved as silage. The mott grass has low concentrations of fermentable carbohydrates and the addition of additives can improve the quality of its silage. Molasses enrich the fresh material with carbohydrates and fills the gaseous pores, thereby reducing the influx of oxygen in the silage. The present study was conducted with an aim to finalize the proper stage of cut for feeding and to establish the best additive, level of additive and fermentation period for mott grass silage making.

Table: Mean comparison of Mott grass silage.

Factors	Mean values (\pm SE) for				
	pH	Lactic acid	DM	CP	Ash
Stage of cut					
45 days	4.30 \pm 0.016 ^a	3.86 \pm 0.012 ^a	16.17 \pm 0.017 ^b	13.73 \pm 0.026 ^a	12.18 \pm 0.015 ^a
60 days	4.34 \pm 0.018 ^a	3.86 \pm 0.014 ^a	18.20 \pm 0.021 ^a	12.59 \pm 0.023 ^b	11.25 \pm 0.019 ^b
Additives					
Molasses	4.28 \pm 0.029 ^b	3.88 \pm 0.010 ^a	17.79 \pm 0.026 ^a	13.15 \pm 0.012 ^a	11.86 \pm 0.022 ^a
Corn	4.36 \pm 0.027 ^a	3.84 \pm 0.013 ^b	16.59 \pm 0.026 ^b	13.17 \pm 0.015 ^a	11.57 \pm 0.035 ^b
Level of additives (%)					
0	4.83 \pm 0.019 ^a	3.64 \pm 0.012 ^c	15.96 \pm 0.032 ^c	12.04 \pm 0.070 ^c	11.47 \pm 0.001 ^d
1	4.29 \pm 0.015 ^b	3.87 \pm 0.020 ^b	17.08 \pm 0.026 ^b	13.41 \pm 0.029 ^b	11.74 \pm 0.006 ^b
3	4.09 \pm 0.019 ^c	3.97 \pm 0.015 ^a	18.28 \pm 0.026 ^a	13.63 \pm 0.029 ^a	11.72 \pm 0.023 ^c
5	4.07 \pm 0.021 ^c	3.97 \pm 0.018 ^a	18.20 \pm 0.026 ^a	13.60 \pm 0.029 ^a	11.93 \pm 0.021 ^a
Fermentation periods (days)					
30	4.35 \pm 0.020 ^a	3.83 \pm 0.012 ^b	16.95 \pm 0.023 ^c	13.12 \pm 0.021 ^b	11.69 \pm 0.035 ^b
35	4.29 \pm 0.018 ^b	3.87 \pm 0.009 ^a	17.32 \pm 0.025 ^a	13.17 \pm 0.006 ^a	11.72 \pm 0.013 ^a
40	4.31 \pm 0.014 ^b	3.89 \pm 0.010 ^a	17.29 \pm 0.025 ^b	13.19 \pm 0.006 ^a	11.74 \pm 0.023 ^a

Values with different superscripts within a row for each factor differ significantly ($P < 0.05$).

Conclusion

It was concluded that mott grass cut at 45 days of its regrowth is the best to harvest maximum nutrients beneficial for more production. To produce the quality mott grass silage, use of molasses @ 3% fodder dry matter and 35 days fermentation period are imperative.

